

# California Head Start Child Outcomes Bulletin

## 2014



## CALIFORNIA HEAD START PROGRAMS CLOSE THE ACHIEVEMENT GAP

Providing two years of Head Start experience to a child increases the probability by between 13% to 86% that the child will meet age appropriate expectations.

This finding is the result of a rigorous analysis of child assessment data from more than 49,467 children collected from 81 Head Start programs across California—representing more than 50% of the entire California Head Start population. Using Regression Discontinuity - a methodology widely used to evaluate preschool impacts - it is possible to provide direct evidence that California Head Start programs provide quality child development services and help children to be better prepared for Kindergarten.

Head Start not only increases the probability that children develop in academic areas, such as math and literacy, but in all areas of development — including social interpersonal skills and self-regulation.

## Head Start Prepares Children for Kindergarten

### **MATHEMATICS**

Two years of Head Start increases the probability by 39% that a child's mathematical skills will meet age appropriate expectations.

### **SELF & SOCIAL DEVELOPMENT**

Two years of Head Start increases the probability by 38% that a child's self and social skills will meet age appropriate expectations.

### **LANGUAGE & LITERACY DEVELOPMENT**

Two years of Head Start increases the probability by 40% that a child's language and literacy skills will meet age appropriate expectations.

### **PHYSICAL DEVELOPMENT**

Two years of Head Start increases the probability by 13% that a child's physical development skills will meet age appropriate expectations.

### **ENGLISH LANGUAGE DEVELOPMENT**

Two years of Head Start increases the probability by 86% that a non-English speaking child will meet age appropriate expectations for non-English speaking children.

### **COGNITIVE DEVELOPMENT**

Two years of Head Start increases the probability by 31% that a child's cognitive development skills will meet age appropriate expectations.

### **HEALTH**

Two years of Head Start increases the probability by 23% that a child's health skills will meet age appropriate expectations.

A child was considered to meet age appropriate expectations if they were assessed in one of the top two developmental levels in the observation-based assessment, Desired Results Developmental Profile - Preschool© (2010), in the spring before entering Kindergarten.

# HIGH QUALITY EARLY EDUCATION PROVIDED BY AN EDUCATED WORKFORCE WITH SUPPORTS FOR CHILDREN AND FAMILIES

**D**emonstrating significant positive program impacts is a product of decades of commitment to children and families.

Head Start is a federally funded program serving families living below the poverty level at no cost to parents since 1965. During the 2012-2013 year, Head Start served more than 95,500 children in California and Early Head Start more than 16,000 children.

Preschool age children participate in part-day or full-day preschool education, are provided breakfast and lunch and are connected with health care providers.

Parent and family engagement opportunities are provided, including: assisting parents in learning more about family literacy, family health services, nutrition at home, school readiness, family goal-setting, and social service referrals.

High quality teaching staff, thoughtful curriculum planning, and regular assessment ensures that the development of children is the principle focus of the program. Fifty-seven percent of teachers have bachelor degrees and another 30% have associate degrees. Teaching staff maintain and improve skills through in-service trainings.

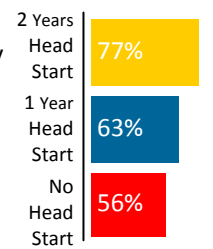
Developmental milestones are documented over time using written observations, photographs and samples of the child's work. These are collected into portfolios that teachers review three times a year to assess each child's level of development. The Head Start programs, in this analysis, all use the Desired Results Developmental Profile® (2010), an observation-based assessment tool developed by the California Department of Education. This analysis is based on the aggregation of those assessments.

Combining these child and family services, Head Start is able to better prepare children for Kindergarten.



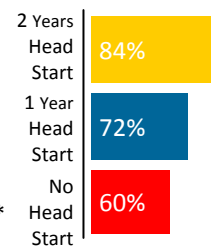
**Mathematical Development**

Two years of Head Start increases the probability by 39% that a child can count to 10 and communicate concepts of larger and smaller.\*\*



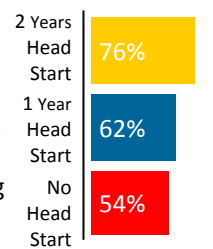
**Self & Social Development**

Two years of Head Start increases the probability by 38% that a child can show expressions of empathy, such as offering hugs or identifying when other children need help.\*\*



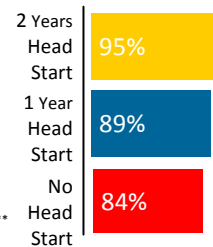
**Language & Literacy Development**

Two years of Head Start increases the probability by 40% that a child will engage in literary activities, such as requesting a specific book or recognizing their own name.\*\*



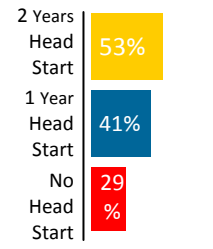
**Physical Development**

Two years of Head Start increases the probability by 13% that a child can achieve mastery of skills such as using scissors to cut small pieces of paper or positioning large blocks..\*\*



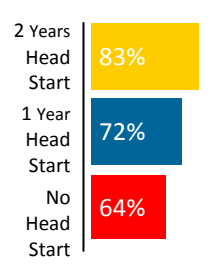
**English Language Development**

Two years of Head Start increases the probability by 86% that a child can understand commonly used English words and phrases.\*\*



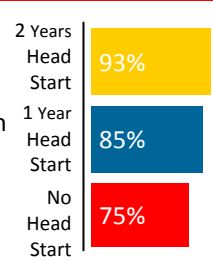
**Cognitive Development**

Two years of Head Start increases the probability by 31% that a child can perform simple investigations, such as pouring water through a funnel and covering the opening.\*\*



**Health**

Two years of Head Start increases the probability by 23% that a child will practice healthy habits such as washing hands, and demonstrate safety habits such as stopping at the curb.\*\*



\*As assessed in the spring before children enter Kindergarten. \*\* Examples are provided to illustrate the types of behaviors children in the top two developmental levels exhibit.



## IMPACTS COMPARABLE TO OTHER HIGH QUALITY PROGRAMS

Researchers often express program impact in terms of effect size, which can be compared across studies.

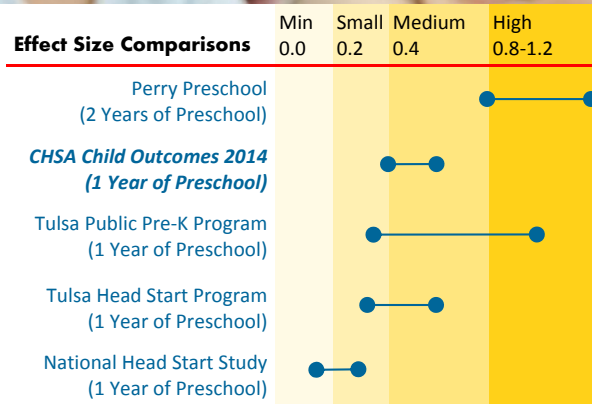
An effect size is the ratio of the program's impact to the standard deviation of the control group. That is a very meaningful statistic for researchers, but for the rest of us, it begs the question, how big was the impact?

The chart to the right shows the one year effect sizes for this study of Head Start as well other studies of preschools. The range of effect sizes for this study were between 0.39 and 0.48. That means that Head Start children with two years of program experience are between 0.39 and 0.48 standard deviations more

developed than children with only one year of Head Start.

There are no hard and fast rules for what constitutes a small or a large effect size. As a rule of thumb, 0.2 to 0.4 can be considered a "small" effect, between 0.4 and 0.8 as a "medium" effect, and higher than 0.8 as a "high" effect. It is also useful to compare these effect sizes to other studies of early education programs.

Meta analysis of the many preschool studies over the past twenty-five years show that one year of preschool tends to have an immediate effect size of about 0.5 standard deviations. These are only rough benchmarks, but they show that California's Head Start programs are producing solid results similar to other early education programs.



### LONG TERM IMPACTS OF QUALITY

This study focused on the immediate-term impact of Head Start, finding that these California Head Start programs produce positive impacts similar to other quality programs. Other research has looked at the long-term benefits of Head Start and State Preschool. Below is RAND's summary of what is known about the impacts of preschool:

*"[A] review of the rigorous evaluations of high-quality preschool programs demonstrates that well-designed programs that serve children one or two years before kindergarten entry can*

- improve measures of school readiness,
- raise performance on academic achievement tests in the early elementary grades,
- generate sustained effects on academic achievement into the middle-school years
- [reduce] special-education use and grade repetition and
- [increase] rates of high-school graduation"

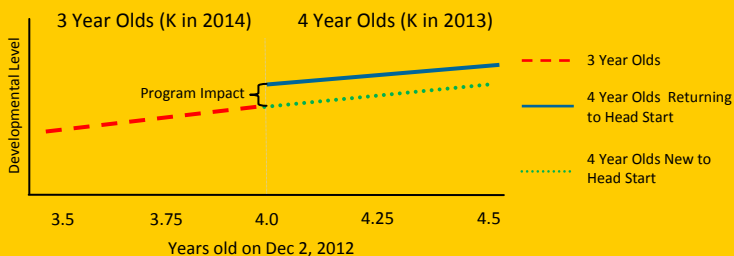
Karoly, Lynn A., Preschool Adequacy and Efficiency in California: Issues, Policy Options, and Recommendations, Santa Monica, Calif.: RAND Corporation, 2009.

# MEASURING PROGRAM IMPACT WITHOUT DENYING CHILDREN HEAD START

This analysis employs a statistical technique called Regression Discontinuity Design (RDD). Over the past decade, it has been used to measure the program impact of preschool programs. Most prominently, the National Institute for Early Education Research at Rutgers University has used the technique to assess a number of state preschool programs. CCR Analytics, a consulting group that serves the early education sector, applied the RDD approach to the aggregated California Head Start data.

A typical research design randomly assigns participants to a control group and an experimental group who would then be enrolled in Head Start. This has the significant downside of denying services to a large group of children. The RDD compares children on either side of the cut-off date for entering Kindergarten.

**Example of Regression Discontinuity Design  
Developmental Levels by Age Fall 2012**



The RDD works by comparing three-year-olds (the control group) enrolled in Head Start to four-year-olds who are returning to Head Start (the experimental group) for their second year. In the simplest form, we are comparing a child born on Dec 3rd (who is starting his first year of two in Head Start—a 3 year old) to a child born on Dec 1st (who is starting his second and final year in Head Start—4 year old) Four-year-olds who are new to Head Start are not included in the analysis. This methodology eliminates the issue of selection bias because both the control group and the experimental group made the decision to attend Head Start as three-year-olds. Regression is used to control for the difference in age and other demographics between the two groups.

The RDD methodology has the significant advantage of being able to estimate these program impacts, without denying children the opportunity to attend Head Start.

## Additional Notes:

Desired Results Developmental Profile - Preschool® 2010 (DRDP-PS® 2010) data was gathered on 49,467 children assessed in the 2012-2013 school year from 81 participating Head Start programs. These Head Start programs were not randomly selected. Participation in the study was open to all California Head Start programs who use the DRDP-PS® 2010. The data represents more than 50% of all Head Start children in California. A child was considered to meet age appropriate expectations if they were assessed in one of the top two developmental levels in the spring before entering Kindergarten.



*The California Head Start Association is the unified voice providing leadership and advocacy for the Head Start community.*

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This document and the supporting analysis were constructed through a collaboration of CCR Analytics (formerly Child Care Results), the California Head Start Association, and the following Head Start programs.

**PARTICIPATING AGENCIES 2014**

- Alpha Kappa Alpha Head Start
- Anaheim Head Start
- Baldwin Park Unified School District
- Bassett Unified School District
- Bellflower Unified School District
- Berkeley Albany YMCA Head Start
- Casa Blanca Head Start
- Central California Child Development Services
- Ceres Unified School District
- Chicano Federation
- Child Care Resource Center
- Children's Institute Inc.
- City of Oakland Head Start
- Coachella Unified School District
- Community Action Commission of Santa Barbara
- Community Action Partnership of Kern
- Contra Costa Head Start
- Desert Sands Unified School District
- Duarte Unified School District
- Eastside - Santa Clara County
- El Monte City School District
- Elk Grove Unified School District
- Empire Union School District
- Encompass Community Services
- Episcopal Community Services
- Foundation For Early Childhood Education
- Fresno County Economic Opportunities Commission
- Garvey School District
- Hacienda La Puente USD
- Hemet Unified School District
- Inglewood Unified School District
- Irvine Unified School District
- Jurupa Unified School District
- Kai Ming Inc.
- Kedren Community Health Center Inc
- Keyes Union School District
- Kidango
- Kings Community Action Organization
- La Habra Head Start
- Lake Elsinore Unified School District
- Los Angeles County Office of Education
- Metro Area Advisory Committee Project
- Mexican American Opportunity Foundation
- Modesto City Schools
- Montebello Unified School District
- Moreno Valley Unified School District
- Mountain View School District
- Neighborhood House Association
- North Coast Opportunities
- Northern California Child Development Inc.
- Norwalk-La Mirada Unified School District
- Orange Children Parents Together
- Orange County Head Start
- Pacific Asian Consortium In Employment
- Palm Springs Unified School District
- Palmdale School District
- Palo Verde Unified School District
- Plaza de la Raza
- Pomona Unified School District
- Riverside County Office of Education
- Riverside Unified School District
- Romoland School District
- Sacrament City Unified School District
- Sacramento Employment and Training Agency
- Salida Union School District
- San Diego Unified School District
- San Jacinto Unified School District
- San Juan Bautista Child Development Center
- San Juan Unified School District
- Santa Ana Unified School District
- Santa Clara County Office of Education
- Santa Monica-Malibu Unified School District
- Shasta County Head Start Child Development
- Sierra Cascade Family Opportunities Head Start
- Stanislaus County Office of Education
- Training and Research Foundation
- Turlock Unified School District
- Twin Rivers Unified School District
- Volunteers Of America
- Waterford Unified School District
- Women's Civic Improvement Club of Sacramento